

SEQUENCE LISTING

<110> E. I. du Pont de Nemours and Company

<120> Flavonoid Biosynthetic Enzymes

<130> BB1324

<140>

<141>

<150> 60/113,190

<151> 1998-12-21

<160> 6

<170> Microsoft Office 97

<210> 1

<211> 1859

<212> DNA

<213> Glycine max

<400> 1

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<210> 2

<211> 499

<212> PRT

<213> Glycine max

<400> 2

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Gly Pro Pro Pro Leu Pro Ile Ile Gly Asn Leu Asn Leu Leu Glu Gln
35 40 45
Pro Ile His Arg Phe Phe Gln Arg Met Ser Lys Gln Tyr Gly Asn Val
50 55 60
Val Ser Leu Trp Phe Gly Ser Arg Leu Ala Val Val Ile Ser Ser Pro
65 70 75 80
Thr Ala Tyr Gln Glu Cys Phe Thr Lys His Asp Val Ala Leu Ala Asn
85 90 95
Arg Leu Pro Ser Leu Ser Gly Lys Tyr Ile Phe Tyr Asn Asn Thr Thr
100 105 110
Val Gly Ser Cys Ser His Gly Glu His Trp Arg Asn Leu Arg Arg Ile
115 120 125
Thr Ala Leu Asp Val Leu Ser Thr Gln Arg Val His Ser Phe Ser Gly
130 135 140
Ile Arg Ser Asp Glu Thr Lys Arg Leu Met Gln Arg Leu Val Leu Ala
145 150 155 160
Lys Asn Ser Asn Glu Glu Glu Phe Ala Arg Val Glu Ile Ser Ser Met
165 170 175
Phe Asn Asp Leu Thr Tyr Asn Asn Ile Met Arg Met Ile Ser Gly Lys
180 185 190
Arg Phe Tyr Gly Glu Glu Ser Glu Met Lys Asn Val Glu Glu Ala Arg
195 200 205
Glu Phe Arg Glu Thr Val Thr Glu Met Leu Glu Leu Met Gly Leu Ala
210 215 220
Asn Lys Gly Asp His Leu Pro Phe Leu Arg Trp Phe Asp Phe Gln Asn
225 230 235 240
Val Glu Lys Arg Leu Lys Ser Ile Ser Lys Arg Tyr Asp Ser Ile Leu
245 250 255
Asn Lys Ile Leu His Glu Asn Arg Ala Ser Asn Asp Arg Gln Asn Ser
260 265 270
Met Ile Asp His Leu Leu Lys Leu Gln Glu Thr Gln Pro Gln Tyr Tyr
275 280 285
Thr Asp Gln Ile Ile Lys Gly Leu Ala Leu Ala Met Leu Phe Gly Gly
290 295 300

Thr Asp Ser Ser Thr Gly Thr Leu Glu Trp Ser Leu Ser Asn Leu Leu
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 325 330 335
 Val Gly Gln Asp Arg Leu Leu Asn Glu Ser Asp Leu Pro Lys Leu Pro
 340 345 350
 Tyr Leu Arg Lys Ile Ile Leu Glu Thr Leu Arg Leu Tyr Pro Pro Ala
 355 360 365
 Pro Ile Leu Ile Pro His Val Ser Ser Glu Asp Ile Thr Ile Glu Gly
 370 375 380
 Phe Asn Ile Pro Arg Asp Thr Ile Val Ile Ile Asn Gly Trp Gly Met
 385 390 395 400
 Gln Arg Asp Pro Gln Leu Trp Asn Asp Ala Thr Cys Phe Lys Pro Glu
 405 410 415
 Arg Phe Asp Val Glu Gly Glu Glu Lys Lys Leu Val Ala Phe Gly Met
 420 425 430
 Gly Arg Arg Ala Cys Pro Gly Glu Pro Met Ala Met Gln Ser Val Ser
 435 440 445
 Phe Thr Leu Gly Leu Leu Ile Gln Cys Phe Asp Trp Lys Arg Val Ser
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 <211> 1698
 <212> DNA
 <213> Glycine max

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 ctcttcctat aatcggaac cttaacctcg ttgaacaacc tatacacctg ttcttccacc 180
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 <211> 494
 <212> PRT
 <213> Glycine max

<400> 4
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 Pro Leu Pro Ile Ile Gly Asn Leu Asn Leu Val Glu Gln Pro Ile His
 35 40 45
 Arg Phe Phe His Arg Met Ser Gln Lys Tyr Gly Asn Ile Ile Ser Leu
 50 55 60
 Trp Phe Gly Ser Arg Leu Val Val Val Val Ser Ser Pro Thr Ala Tyr
 65 70 75 80
 Gln Glu Cys Phe Thr Lys His Asp Val Thr Leu Ala Asn Arg Val Arg
 85 90 95
 Ser Leu Ser Gly Lys Tyr Ile Phe Tyr Asp Asn Thr Thr Val Gly Ser
 100 105 110
 Cys Ser His Gly Glu His Trp Arg Asn Leu Arg Arg Ile Thr Ser Leu
 115 120 125
 Asp Val Leu Ser Thr Gln Arg Val His Ser Phe Ser Gly Ile Arg Ser
 130 135 140
 Asp Glu Thr Lys Arg Leu Ile His Arg Leu Ala Arg Asp Ser Gly Lys
 145 150 155 160
 Asp Phe Ala Arg Val Glu Met Thr Ser Lys Phe Ala Asp Leu Thr Tyr
 165 170 175
 Asn Asn Ile Met Arg Met Ile Ser Gly Lys Arg Phe Tyr Gly Glu Glu
 180 185 190
 Ser Glu Leu Asn Asn Val Glu Glu Ala Lys Glu Phe Arg Asp Thr Val
 195 200 205

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Asn	Arg	Asn	Asn	Lys	Asp	Arg	Glu	Asn	Ser	Met	Ile	Gly	His	Leu	Leu	260	265	270	
Lys	Leu	Gln	Glu	Thr	Gln	Pro	Asp	Tyr	Tyr	Thr	Asp	Gln	Ile	Ile	Lys	275	280	285	
Gly	Leu	Ala	Leu	Ala	Met	Leu	Phe	Gly	Gly	Thr	Asp	Ser	Ser	Thr	Gly	290	295	300	
Thr	Leu	Glu	Trp	Ala	Leu	Ser	Asn	Leu	Val	Asn	Asp	Pro	Glu	Val	Leu	305	310	315	320
Gln	Lys	Ala	Arg	Asp	Glu	Leu	Asp	Ala	Gln	Val	Gly	Pro	Asp	Arg	Leu	325	330	335	
Leu	Asn	Glu	Ser	Asp	Leu	Pro	Lys	Leu	Pro	Tyr	Leu	Arg	Lys	Ile	Val	340	345	350	
Leu	Glu	Thr	Leu	Arg	Leu	Tyr	Pro	Pro	Ala	Pro	Ile	Leu	Ile	Pro	His	355	360	365	
Val	Ala	Ser	Glu	Asp	Ile	Asn	Ile	Glu	Gly	Phe	Asn	Val	Pro	Arg	Asp	370	375	380	
Thr	Ile	Val	Ile	Ile	Asn	Gly	Trp	Ala	Met	Gln	Arg	Asp	Pro	Lys	Ile	385	390	395	400
Trp	Lys	Asp	Ala	Thr	Ser	Phe	Lys	Pro	Glu	Arg	Phe	Asp	Glu	Glu	Gly	405	410	415	
Glu	Glu	Lys	Lys	Leu	Val	Ala	Phe	Gly	Met	Gly	Arg	Arg	Ala	Cys	Pro	420	425	430	
Gly	Glu	Pro	Met	Ala	Met	Gln	Ser	Val	Ser	Tyr	Thr	Leu	Gly	Leu	Met	435	440	445	
Ile	Gln	Cys	Phe	Asp	Trp	Lys	Arg	Val	Ser	Glu	Lys	Lys	Leu	Asp	Met	450	455	460	
Thr	Glu	Asn	Asn	Trp	Ile	Thr	Leu	Ser	Arg	Leu	Ile	Pro	Leu	Glu	Ala	465	470	475	480
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 <212> DNA
 <213> Glycine max

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<211> 141
<212> PRT
<213> Glycine max

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20 25 30
Ile Ile Gly Asn Leu His Gln Leu Lys Gln Pro Leu His Arg Thr Phe
35 40 45
His Ala Leu Ser Gln Lys Tyr Gly Pro Ile Phe Ser Leu Trp Phe Gly
50 55 60

Ser	Arg	Phe	Val	Val	Val	Val	Ser	Ser	Pro	Leu	Ala	Val	Gln	Glu	Cys
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Phe	Thr	Lys	Asn	Asp	Ile	Val	Leu	Ala	Asn	Arg	Pro	His	Phe	Leu	Thr
				85					90					95	
Gly	Lys	Tyr	Ile	Gly	Tyr	Asn	Asn	Thr	Thr	Val	Ala	Val	Ser	Pro	Tyr
			100					105					110		
Gly	Asp	His	Trp	Arg	Asn	Leu	Arg	Arg	Ile	Met	Ala	Leu	Glu	Val	Leu
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Ser	Thr	His	Arg	Ile	Asn	Ser	Phe	Leu	Glu	Asn	Arg	Arg			
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